

part to its early establishment, Cacheville/Yolo served as the Yolo County seat during 1857–1860 and by 1870 boasted three stores, two saloons, a hotel, the county courthouse, and a number of homes and other businesses. Today, many of these buildings remain in use, and the town contains a higher concentration of buildings from the earliest period of American settlement than anywhere else in the county (Les 1986).

Although the Gold Rush initially sent thousands of people into the region in search of their fortunes, it was agriculture that quickly proved to be the most profitable enterprise. The development of agriculture within the Sacramento Valley and Yolo County specifically was dependent upon irrigation systems. The first was constructed in 1864 when James Moore completed a dam across Cache Creek and 9 miles of canals that supplied water to county farmers. A series of droughts in the 1860s necessitated the need for increasingly larger projects; however, it was not until the 20th century and implementation of the federal Central Valley Project that agriculture, aided by construction of a railroad network, vastly increased its contribution to the economic and subsequent political development of the Sacramento Valley, which has lasted to the present day.

CULTURAL RESOURCES IN THE PROJECT AREA

A records search conducted through the Northwest Information Center (NWIC) focused on the immediate project site (Appendix B) and within approximately ¼ mile from the project boundaries. Although no cultural resources have been documented directly within the project site, several prehistoric and historic-era resources have been documented in the immediate vicinity. Apart from numerous buildings within the present-day town of Yolo, two prehistoric sites have been recorded along the banks of Cache Creek in the vicinity of the project site. These include CA-Yol-135, an extensive early Native American occupation and interment site situated near the south bank of Cache Creek, across from the town of Yolo, and CA-Yol-187, a burial site near the intersection of Casa Linda Lane and Second Street in Yolo. Although neither of these sites would be affected by the proposed project at Cache Creek LM 3.9L and Cache Creek LM 4.2L, their presence illustrates the highly sensitive nature of the surrounding area to contain Native American cultural and human remains and traces of early historic-era activities.

CULTURAL RESOURCES AT THE PROJECT SITE

Levee

A concurrence letter issued by the State Historic Preservation Officer on October 26, 2007 (Appendix C) indicates that the only cultural resource identified as a result of the cultural resources studies conducted by DWR under California Public Resources Code 5024(f) for the proposed project was the Cache Creek levee.

DISCUSSION

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Less-than-Significant Impact. Only one cultural resource (Cache Creek levee) was identified within the project site, though it will not be significantly impacted by temporary ground-disturbing activities associated with the proposed project. A portion of the adjacent property would be purchased by DWR for construction of the proposed project. The buildings located on the adjacent property would not be impacted by the proposed project. Because the identified levee within the project area will not be significantly impacted by the proposed project, there would be a less-than-significant impact to Historical Resources.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less than Significant with Mitigation. Despite the fact that previous archival and field research revealed the presence of only one prehistoric or historic-era cultural resource within the project area (Cache Creek levee), it is important to note that undiscovered subsurface remains may be present in the area and could be disturbed by the proposed project. In light of the potential to uncover unknown or undocumented subsurface cultural remains, this impact would be potentially significant. Implementation of Mitigation Measure Cul-1 would reduce this potential impact to a less-than-significant level.

Mitigation Measure Cul-1: Immediately Halt Construction Activities if Any Cultural Materials Are Discovered.

If an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, flaked stone, bottle glass, ceramics, structure/building remains, etc.) is encountered during project-related construction activities, ground disturbances in the area of the find will be halted immediately and a qualified professional archaeologist will be notified regarding the discovery. The archaeologist shall determine whether the resource is potentially significant as per the California Register of Historic Resources (CRHR) and develop appropriate mitigation. Implementation of this mitigation measure would reduce this impact to a less-than-significant level.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact. Based on soil borings and a geotechnical report prepared by DWR (2007), project-related construction activities would take place in Holocene-age (11,000 years Before Present and younger) alluvium. By definition, in order to be considered a fossil, an object must be more than 11,000 years old. Therefore, project-related construction activities would have no impact on unique paleontological resources.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant with Mitigation. Although no evidence of human remains was found in documentary research and a field reconnaissance investigation, future ground-disturbing activities in the project area could adversely affect presently unknown prehistoric burials. California law recognizes the need to protect interred human remains, particularly Native American burials and associated items of patrimony, from vandalism and inadvertent destruction. In light of the potential to uncover unknown or undocumented Native American burials, this impact is considered potentially significant. Implementation of Mitigation Measure Cul-2 would reduce this impact to a less-than-significant level.

Mitigation Measure Cul-2: Immediately Halt Construction Activities if Any Human Remains Are Discovered.

The procedures for the treatment of discovered human remains are contained in California Health and Safety Code Sections 7050.5 and 7052, and California Public Resources Code Section 5097.

In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, all such activities within 75 feet of the find shall be halted immediately and DWR or their designated representative shall be notified. DWR shall immediately notify the county coroner and a qualified professional archaeologist. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or State lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). DWR's responsibilities for acting upon notification of a discovery of Native American human remains are identified in detail in the California Public Resources Code Section 5097.9. DWR or their appointed

representative and the professional archaeologist will consult with a Most Likely Descendent (MLD) determined by the NAHC regarding the removal or preservation and avoidance of the remains and determine if additional burials could be present in the vicinity.

Assuming an agreement can be reached between the MLD and DWR or their representative with the assistance of the archaeologist, these steps will minimize or eliminate adverse impacts to the uncovered human remains. Therefore, Mitigation Measure Cul-2 would reduce the potential impact to a less-than-significant level.

GEOLOGY AND SOILS

THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Geology and Soils. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This section provides a description of the geologic conditions of the project site and mitigation if needed to reduce significant effects to geologic resources.

ENVIRONMENTAL SETTING

The project site is located near the western boundary between the Great Valley and Coast Ranges geomorphic provinces. The lower Cache Creek basin consists of continental deposits of silt-clay, sand, and gravel. The overlying alluvial deposits are similar and generally not as coarse as the continental deposits.

Lower Cache Creek flows through alluvial fan and floodplain deposits ranging from clay and silt to coarse sand and gravel (Wahler Associates 1982 cited in USACE 2002). Borehole data show clay deposits are common at

depths in excess of 20 to 35 feet from the ground surface, whereas more recently deposited silt and sand generally characterize sediments above the 20- to 35-foot depth (USACE 1958; Wahler Associates 1982 cited in USACE 2002).

Soils in the project site and vicinity are Reiff very fine sandy loam. This soil type is found on alluvial fans and is a well-drained soil. Slopes are typically 0 to 1 percent. Reiff soils are used for row, field, and orchard crops. Uncultivated areas have annual grasses and forbs. Surface runoff for Reiff soils is slow to very slow, and the erosion hazard is slight (Soil Conservation Service 1972).

Several faults are located in the vicinity of the project site. The Dunnigan Hills Fault and Gordon Valley Fault are the nearest faults to the project site. The Dunnigan Hills Fault is located approximately 3 miles northwest of the project site and is considered potentially active. The Gordon Valley Fault is located approximately 10 miles west of the project site and is capable of generating a magnitude 6.5 earthquake (DWR 2007). Other faults in the region include the Zamora Fault and the Capay Fault, both of which are considered to be inactive (Jennings 1994 cited in USACE 2002).

The potential exists for liquefaction to occur in the project site. The presence of shallow groundwater and the potential for moderate ground shaking due to faulting and seismicity in the area make the soils in the project site potentially susceptible to liquefaction (DWR 2007).

DISCUSSION

- a) **Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:**
 - i **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**
 - ii **Strong seismic ground shaking?;**
 - iii **Seismic-related ground failure, including liquefaction?**
 - iv **Landslide?**

Less-than-Significant Impact. Because the proposed project is located near the Dunnigan Hills and Gordon Valley Fault, which are considered active, the potential exists for ground shaking and liquefaction in the project site. However, no structures for human occupancy, as defined in Section 3601 of the California Code of Regulations (CCR), would be placed across any fault or within 50 feet of any fault.

There are thick layers of sandy and gravelly sediments below the groundwater table which could liquefy and produce some settlement. However, the amounts of settlement would be minimal (i.e., a few inches). Therefore, liquefaction is regarded to be a moderate hazard, but settlement due to liquefaction is not anticipated to pose a catastrophic hazard to the levees. All levee improvements, including the proposed project, would be designed based on the results of detailed geotechnical engineering studies and would be required to comply with standard engineering practices for levee design. The Central Valley Flood Protection Board's standards are the primary state standards applicable to the proposed levee improvements; these are stated in Title 23, Division 1, Article 8, Sections 111–137 of the California Code of Regulations. The Board's standards direct that levee design and construction be in accordance with USACE's *Engineering Design and Construction of Levees*, the primary Federal standards applicable to levee improvements. Because the design, construction, and maintenance of levee improvements must comply with the regulatory standards of USACE and the Central Valley Flood Protection

Board, the design and construction of all levee modifications under the proposed project would meet or exceed applicable design standards for static and dynamic stability, secondary impacts related to ground shaking, liquefaction, and seepage.

Construction of the setback levees would not increase risk to people or property associated with seismic activity or landslides; rather, it would further protect the integrity of the Cache Creek levee system and would increase the protection of people and property in the project area from flooding. Because no structures would be constructed in the fault zone and the proposed project would add stability to the Cache Creek levee system and the levee setbacks would meet applicable State and Federal levee modification design and construction standards, this impact would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

Less than Significant with Mitigation. The proposed project would be constructed on Reiff soils that have a low potential for erosion. Construction of the setback levees would occur primarily before the rainy season, further reducing the risk of water erosion. Most of the construction activities would be on the landside of the existing levee; however, two 10-foot-wide notches would be cut into the existing levee at LM 3.9L, and one 10-foot notch would be cut into the existing levee at LM 4.2L. Disturbing topsoil during levee construction and creating the notches in the existing levees could increase the potential for wind and water erosion in the project area; therefore, this impact is potentially significant. As discussed under Mitigation Measure Hydro-1 in the "Hydrology and Water Quality" section (below), the construction contractor would be required to implement a stormwater pollution prevention plan (SWPPP) and best management practices (BMPs). The SWPPP will include an erosion control and restoration plan, a water quality monitoring plan, a hazardous materials management plan, and postconstruction BMPs. Implementation of Mitigation Measure Hydro-1 would reduce this impact to a less-than-significant level.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than Significant. As discussed in a) above, liquefaction is regarded to be a moderate hazard, but settlement due to liquefaction is not anticipated to pose a catastrophic hazard to the levees. The proposed project would be constructed on soils with somewhat variable in-place densities which indicate that the levee foundation will undergo some consolidation (i.e. a few inches). The 2007 Geotechnical Report for the project site (DWR 2007) found that there is a potential for seepage that could undermine levee stability. In addition, temporary cut slopes in the dry sandy alluvial materials can be cut at 1:1 (horizontal to vertical) but may not remain stable even for a short period of time. The proposed project would be designed based on the results of detailed geotechnical engineering studies and would be required to comply with standard State and Federal engineering practices for levee design. As discussed in a) above, the design, construction, and maintenance of levee improvements must comply with the regulatory standards of USACE and the Central Valley Flood Protection Board. The design and construction of the proposed project would meet or exceed applicable design standards for static and dynamic stability, secondary impacts related to ground shaking, liquefaction, and seepage. The setback levees would ultimately increase the stability of the existing levee system, resulting in a flood control benefit. Therefore, the proposed project would have a less than significant effect on expansive or unstable soils.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

No Impact. The project soils exhibit a low shrink-swell potential. In addition, no structures for human occupancy would be constructed as part of the project. The setback levees would increase the stability of the existing levee system, resulting in a flood control benefit. Because the soils in the project area have low shrink-swell potential, the proposed project would not result in the creation of substantial risks to property or life.

- e) **Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?**

No Impact. No septic tanks or waste water disposal systems would be constructed as part of the proposed project. Therefore, there would be no impact on disposal of waste water.

HAZARDS AND HAZARDOUS MATERIALS

THRESHOLDS OF SIGNIFICANCE		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII.	Hazards and Hazardous Materials. Would the project:				
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h)	Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

This section provides a description of potential hazards and hazardous materials that may be created as a result of the proposed project and mitigation if needed to reduce any significant hazardous effects.

ENVIRONMENTAL SETTING

In March 2000, a Phase I Environmental Site Assessment (site assessment) was performed for Lower Cache Creek, the existing levees, and the Cache Creek settling basin. The records investigation included a 1-mile

corridor on the landside of Cache Creek. The site assessment identified environmental concerns including asbestos, construction and demolition debris, drums, landfill or solid waste disposal sites, pits, waste disposal ponds or lagoons, wastewater, fill dirt, depressions, mounds, Polychlorinated Biphenyl (PCB)-containing transformers, structures used for the storage of chemicals, and tanks. None of these objects are located within the project site boundaries (USACE 2002).

Gravel is mined within the western portion of the Cache Creek watershed. The gravel mining does not involve chemical extraction, so there is no hazardous, toxic, or radioactive waste (HTRW) contamination associated with the mining. Common fuels and lubricants are used to operate and maintain the mining equipment.

Surface water and sediment flowing from up-gradient sources contain elevated concentrations of boron and mercury. Elevated boron is a result of naturally occurring mineral spring sources, whereas mercury presence results from mercury mining and natural minerals. During periods of lower stream flow in Cache Creek, boron-containing minerals precipitate along the banks of the creek. Mercury remains in creek bottom sediments. Both minerals are an HTRW concern for reuse of stream bank soil and creek bottom sediments.

Groundwater in the project area is typically shallow and in contact with surface water for most of the year. Based on available data, groundwater has not been affected by manmade chemicals, but there are localized areas of elevated boron concentrations due to naturally occurring soil minerals (USACE 2002).

DISCUSSION

a) **Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

Less-than-Significant Impact. Construction of the proposed project would involve the routine transport and handling of hazardous substances such as diesel fuels, lubricants, asphalt, etc. Handling and transport of these materials could result in the exposure of workers to hazardous materials. As discussed under Mitigation Measure Hydro-1 in the "Hydrology and Water Quality" section, the construction contractor would be required to implement a stormwater pollution prevention plan (SWPPP) and best management practices (BMPs) that would minimize the potential for construction-related spills of hazardous wastes and would provide for appropriate and immediate cleanup of spills, if any were to occur.

State agencies regulating hazardous materials are the California Environmental Protection Agency (Cal/EPA) and the Office of Emergency Services (OES). The California Highway Patrol (CHP) and California Department of Transportation (DOT) enforce regulations for hazardous materials transport. Within the Cal/EPA, the California Department of Toxic Substances Control (DTSC) has primary regulatory authority for hazardous materials regulation enforcement. State hazardous waste regulations are contained primarily in CCR Title 22. The California Occupational Health and Safety Administration (Cal OSHA) has developed rules and regulations regarding worker safety around hazardous and toxic substances. Because DWR and its contractors would implement and comply with these regulations, impacts related to creation of significant hazards to the public through routine transport, use, and disposal of hazardous materials would not occur. Additionally, because DWR and its contractors would prepare and adhere to a SWPPP and BMPs during project construction, impacts from potential spills of hazardous materials would be minimized. Therefore, this impact would be less than significant.

b) **Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?**

Less than Significant with Mitigation. During construction of the proposed project, hazardous materials such as fuels and lubricants would be used to operate construction equipment such as scrapers, excavators, compactors, haul trucks, and loaders. Fuels and lubricants have the potential to be released into the environment at the project

site causing environmental and/or human exposure to these hazards. This impact would be potentially significant. Implementation of Mitigation Measures Haz-1 (as well as preparation and implementation of a SWPPP and BMPs (see "Hydrology and Water Quality" section) would reduce this impact to a less-than-significant level.

Mitigation Measure Haz-1: Ensure That All Employees Handling Hazardous Materials Are Trained In the Safe Handling and Storage of Hazardous Materials.

Prior to the commencement of project construction, DWR or its contractor shall:

- ▶ ensure that any employee handling hazardous materials is trained in the safe handling and storage of hazardous materials and trained to follow all applicable regulations with regard to such hazardous materials; and
- ▶ identify a staging area where hazardous materials will be stored during construction in accordance with applicable State and federal regulations.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less-than-Significant Impact. The project site is located a quarter-mile from the Migrant Headstart School, located on County Road 17a. Mitigation Measure Haz-1 would ensure the safe handling of hazardous materials during project construction. Therefore, implementation of the project, including construction activities, would not pose a hazard to children attending the Migrant Headstart School. The impact would be less than significant.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. Soil-disturbing activities would be necessary to prepare the project site for construction of the proposed project. However, no hazards were identified at the project site in the site assessment completed for Lower Cache Creek. In addition, the project site is not identified by the U.S. Environmental Protection Agency (EPA) as a hazardous materials site (EPA 2008). Thus, the project would not create a significant hazard to the public or to the environment and, therefore, would have no impact on the public or the environment.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The project area is not located within an airport land use plan (SACOG 2003) or within 2 miles of a public airport or public use airport. The nearest airport, Woodland Municipal Airport, is located approximately 6 miles southwest of the project site. No impact would occur.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The nearest private airstrip to the project site, Sunrise Dusters, is located approximately 7 miles north of the project site. No impact to safety would occur as a result of the project.